Title (en)

Lubricating film and method of manufacturing the same

Title (de)

Gleitfilm und Verfahren zu seiner Herstellung

Title (fr)

Film lubrifiant et méthode pour sa préparation

Publication

EP 0582131 B1 19970502 (EN)

Application

EP 93111661 A 19930721

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JP 20264792 A 19920729

Abstract (en)

[origin: EP0582131A1] A lubricating film of the invention is comprised of a chemically adsorbed monomolecular film, in which long-chain molecules are chemically bonded to at least one surface of a substrate via siloxane bonding, and layers of chemically adsorbed monomolecular film are formed on the surface of the previously formed chemically adsorbed monomolecular film after changing the groups at the end of chemical admolecules to monofunctional groups. The lubricating film has excellent endurance against sliding, with lubrication and anti-abrasion properties, and such properties of the film can be maintained for a long period. A chemically adsorbed monomolecular film can be formed on a substrate surface via covalent bonding (SiO-) by the dehydrochlorination reaction between active hydrogens on the substrate surface and the silane-based chemical adsorbent comprising dimethylsilyl groups. The substrate formed with the chemically adsorbed monomolecular film is then treated by an oxidation treatment, an alkaline treatment or an energy irradiation, thus changing the dimethylsilyl groups to the active hydrogen groups such as hydroxyl groups, imino groups or the like. The above-noted chemical adsorbent is contacted to the substrate surface, thus forming a chemically adsorbed multilayer film. Moreover, a long-chain hydrocarbon compound can be physically adsorbed to the surface of the chemically adsorbed multilayer film.

IPC 1-7

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IPC 8 full level

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